



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,730	07/25/2003	Raymond Kwong	10052/4001	9704
23838	7590	12/22/2005	EXAMINER	
KENYON & KENYON 1500 K STREET NW SUITE 700 WASHINGTON, DC 20005			YAMNITZKY, MARIE ROSE	
			ART UNIT	PAPER NUMBER
			1774	

DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/626,730

Applicant(s)

KWONG ET AL.

Examiner

Marie R. Yamnitzky

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-8, 12-18, 21-27, 30-32 and 34-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12 is/are allowed.
- 6) ☒ Claim(s) 3-5, 15, 17, 21-27, 30, 32 and 34-38 is/are rejected.
- 7) ☒ Claim(s) 6-8, 13, 14, 16, 18 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 1774

1. This Office action is in response to applicant's amendment filed September 29, 2005, which amends the specification, cancels claims 1, 2, 9-11, 19, 20, 28, 29 and 33, amends claims 3, 12-18, 21-27 and 35-37, and adds claim 38.

Claims 3-8, 12-18, 21-27, 30-32 and 34-38 are pending.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. All rejections set forth in the Office action mailed June 29, 2005 are overcome by amendment and/or rendered moot by claim cancellation.

Rejections based on newly discovered prior art are set forth in this action. The new prior art rejections are not necessitated by applicant's amendment. Therefore, this action is not made final.

3. Claim 38 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The language "additionally or alternatively, any two substituents may join to form a ring" is not fully supported by the application as originally filed. This language provides for ring formation not explicitly disclosed in the original disclosure such as, for example, ring formation between R₄ and R₉.

Art Unit: 1774

4. Claims 3-5, 15, 17, 21-23, 27, 30, 32, 34 and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by Boroson et al. (US 6,703,180 B1).

See the whole patent. In particular, see Fig. 1, column 6, lines 32-59, c. 14, l. 20-27 and c. 15, l. 26-65.

The material of Formula V as defined in present claims 3 and 38 encompasses a metal compound having hydroxyphenylpyridine as a ligand. The ligand structure defined in present claim 27 encompasses a hydroxyphenylpyridine ligand.

In column 15, Boroson et al. teach that a metal compound having hydroxyphenylpyridine as a ligand may be used in an electron-transporting layer. The electron-transporting layer is positioned between an emissive layer and a cathode, and is in physical contact with the emissive layer. The emissive layer may produce phosphorescent emission such as when the emissive layer comprises a dopant that is a phosphorescent compound such as taught in c. 6.

Regarding present claims 5 and 30, Boroson et al. teach that the metal of the metal compound may be an alkaline earth metal, thus anticipating the device of claims 5 and 30 wherein M is magnesium.

Regarding present claims 15 and 17, the required properties are expected by the examiner to be inherently met by a metal compound according to Boroson et al. wherein the organic ligand is hydroxyphenylpyridine since a metal compound having a hydroxylphenylpyridine ligand is demonstrated in the present specification to have these properties.

Regarding present claims 21 and 22, the electron-transporting layer may be in physical contact with the cathode, as in the device depicted in Fig. 1, or there may be an electron-injecting layer between the electron-transporting layer and the cathode as taught, for example, in c. 14.

Regarding present claims 23 and 34, the emissive layer may comprise a hole-transporting host material as taught, for example, in c. 6.

5. Claims 24-26 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boroson et al. (US 6,703,180 B1) as applied to claims 3-5, 15, 17, 21-23, 27, 30, 32, 34 and 38 above, and for the further reasons set forth below.

While Boroson et al. teach that the emissive layer may comprise a hole-transporting host material, Boroson et al. do not limit the LUMO of the metal compound in the electron-transporting layer relative to the LUMO of the hole-transporting host material. It would have been within the level of ordinary skill of a worker in the art at the time of the invention to determine suitable and optimum combinations of materials for the emissive layer and the electron-transporting layer based on characteristics such as LUMO and HOMO values of the materials in order to effect an appropriate flow of electrons and holes to the emissive layer.

6. Claim 12 is allowed.

Art Unit: 1774

7. Claims 6-8, 13, 14, 16, 18 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY
December 20, 2005



MARIE YAMNITZKY
PRIMARY EXAMINER

1774